Two 8-bit 1.25 Gsps A/D and two 14-bit 5.6 Gsps D/A channels

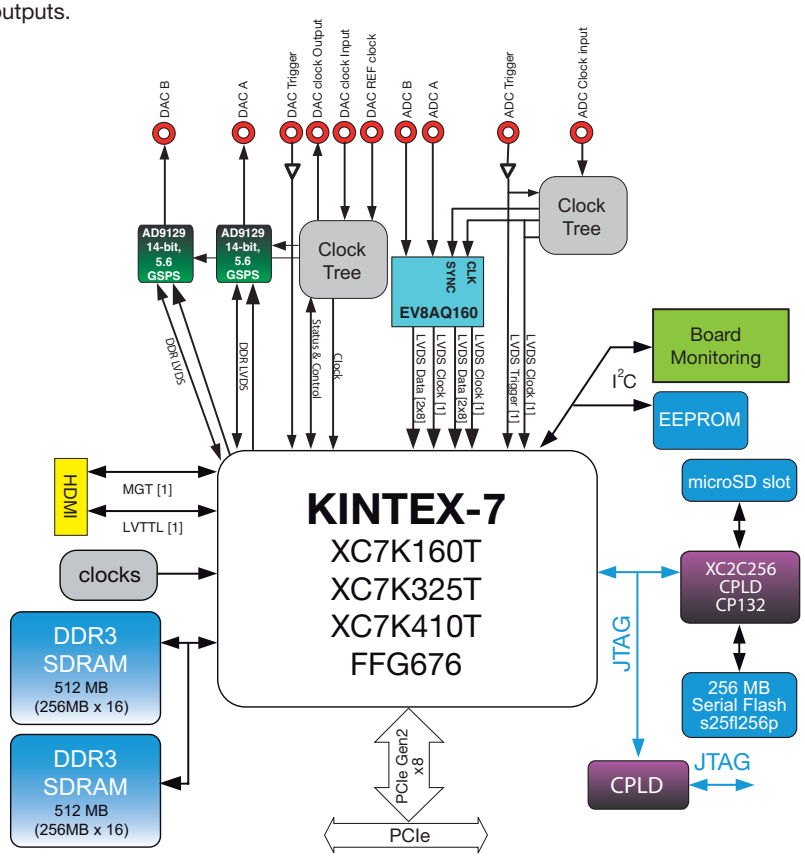
PC722 Kintex™-7 PCIe Card

Description

The PC722 is a high-performance, half-size PCI Express card with I/O capabilities designed to address advanced data acquisition and Digital Signal Processing (DSP) requirements. The card is a variant of 4DSP's widely adopted PC720 Kintex-7 FPGA carrier card with 1GB of DDR3 SDRAM. The PC722 is an excellent choice for high-performance applications, such as software-defined radio, that require large band signals digitization or generation through the use of accelerated frequency-domain algorithms or video applications that are bandwidth hungry.

The signal inputs for the PC722 are digitized by a dual-channel multi-mode A/D that provides two 8-bit ADC channels that enable simultaneous sampling of 2 or 1 channel with a maximum sample rate of 1.25 GSPS (2-channel mode) or 2.5 GSPS (1-channel mode). In addition, the PC722 offers flexible control of clock source, sampling frequency, and calibration through the I2C serial communication bus.

The A/D design is based on the E2V Quad A/D EV8AQ160 chipset with DDR LVDS outputs.



www.4dsp.com/PC722

Features

- Kintex-7 XC7K160T, XC7K 325T, XC7K410T
- PCIe Gen2 x8/4-lane, PCIe Gen3 x4 (softcore)
- 1GB DDR3 SDRAM
- Micro SD Flash (32GB)
- External clock and trigger
- Single-ended AC-coupled analog input and output
- Dual – Single Channel 8-Bit A/D up to 2.50 Gsps
- 2-channel 14-bit D/A up to 5.6 Gsps

Applications

- Software Defined Radio (SDR)
- RADAR/SONAR
- Satellite communication systems
- Radio Jamming
- Baseband Communication Transceivers
- Multi-Channel digital receivers
- Event Processor & Recorder
- A/D, D/A Signal Processing
- Wideband Waveform generation
- Direct RF Down Conversion
- Ultra Wideband Satellite Digital Receiver
- Medical equipment
- Aerospace and test measurement instruments

Software Support

- Stellar IP is available for this product
  A simple way to design FPGA firmware with automated code and bitstream generation
- User Manual
- Performance Guide
- Private support provided on 4DSP's support forum

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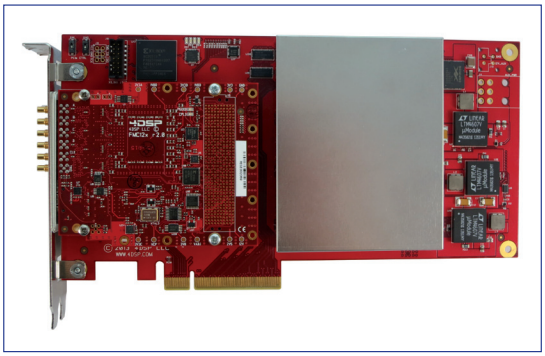
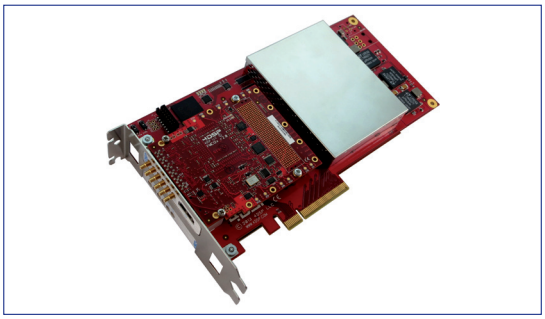
Signal outputs from the PC722 are available from a dual-channel, very wide band DAC. The two 14-bit D/A channels operate at 5.6Gsps (2.8Gsps direct RF synthesis). The D/A design is based on the Analog Devices AD9129 single channel 14-bit 5.6Gsps digital-to-analog converter. The analog signals are AC-coupled, connecting to MMCX or SSMC coaxial connectors on the front panel. The PC722 is equipped with power supply and temperature monitoring and offers several power-down modes to switch off unused functions for both A/D and D/A.





User Selectable Build Options

Configure the PC722 board to meet you requirements.
Your board will be built to the specifications you select in the part number options.

Standalone Operation

For a lab test environment or custom system, the PC722 can be run in a standalone mode. In this set-up the power is supplied through the industry standard PCIe power connector.

Ordering information

Build your part number online on the product page
http://www.4dsp.com/part_num/pc722.html

	Air-cooled		Conduction-cooled	
	EAC4	EAC6	ECC1	ECC4
Operating temperature	0C to +55C	-40C to +70C	0C to +55C	-40C to +85C
Storage temperature	-40C to +85C	-50C to +100C	-40C to +85C	-55C to +105C
Humidity	95%	95%	95%	95%
Operating vibration	5Hz to 100Hz, PSD = 0.04g2/Hz; 100 Hz to 1000 Hz PSD = 0.04 gs^2/Hz; 1000 Hz to 2000 Hz PSD decreasing at 6 dB/ octave	5Hz to 100Hz,PSD = 0.04g2/Hz; 100 Hz to 1000 Hz PSD = 0.04 gs^2/Hz; 1000 Hz to 2000 Hz PSD decreasing at 6 dB/ octave	5 Hz to 100 Hz PSD increasing at 3 dB/ octave 100 Hz to 1000 Hz PSD = 0.1 g2/ Hz; 100 Hz to 1000 Hz PSD = 0.1 g^2/Hz; 1000 Hz to 2000 Hz PSD decreasing at 6 dB/octave	5 Hz to 100 Hz PSD increasing at 3 dB/ octave 100 Hz to 1000 Hz PSD = 0.1 g2/Hz; 100 Hz to 1000 Hz PSD = 0.1 g^2/Hz; 1000 Hz to 2000 Hz PSD decreasing at 6 dB/octave
Operating shock	20g, 11 millisecond, half-sine; or 20g, 11 millisecond, terminal sawtooth shock pulses in all three axes	20g, 11 millisecond, half-sine; or 20g, 11 millisecond, terminal sawtooth shock pulses in all three axes	40g, 11 millisecond shock half-sine; or 40g, 11 millisecond, terminal sawtooth shock pulses in all three axes	40g, 11 millisecond shock half-sine; or 40g, 11 millisecond, terminal sawtooth shock pulses in all three axes
Operating altitude	-1500 ft to 60,000 ft (with airflow)	-1500 ft to 60,000 ft (with airflow)	-1500 ft to 60,000 ft	-1500 ft to 60,000 ft
Conformal coating	Optional	Optional	Optional	Optional

Talk to us about your algorithmic requirements, 4DSP is a full-service firmware and software development house. We are a specialist at high performance FFT and Video Processing. Check with us, we may have IP Cores that meet requirements for your application, right off the shelf.

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